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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,183	05/11/2001	Iraj Hessabi	PA110-01	6154

23663 7590 07/07/2003  
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EXAMINER

RUTHKOSKY, MARK

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 07/07/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/853,183

Applicant(s)

HESSABI, IRAJ

Examiner

Mark Ruthkosky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 5/8/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

The drawings filed on 5/11/2001 have been approved.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Zito (US 5,439,757.)

The instant claims are to a DC power source battery comprising a plurality of chambers having walls that are electrically non-conductive, a liquid in the chambers, a positive and a negative electrode and a means for refreshing the liquid.

Zito (US 5,439,757) teaches a battery including a cell that includes a plurality of chambers having membrane walls that are electrically non-conductive (see claims 1-5 and figures 1—3.) An aqueous liquid flows through the chambers. Positive and negative electrodes are located in the chambers. Pumps shown before the chamber and valves shown after the chamber provide a means for refreshing the liquid. Thus, the claim is anticipated.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zito (US 5,439,757.)

Zito (US 5,439,757) teaches a battery including a cell that includes a plurality of chambers having membrane walls that are electrically non-conductive (see claims 1-5 and figures 1—3.) An aqueous liquid flows through the chambers. Positive and negative electrodes are located in the chambers. Pumps shown before the chamber and valves shown after the chamber provide a means for refreshing the liquid. The cell is a closed system with gas vents in the reservoir tanks.

With regard to claim 2, the reference does not teach a valve connected to the entry port of the chamber. The use of a valve is taught in the reference at the outlet of the chamber. It would be obvious to one of ordinary skill in the art at the time the invention was made to include a valve at the entry of the chamber as one of ordinary skill in the art would understand from the teachings of Zito that valve assemblies are used to open and close passages in a flowing battery system. In the reference, the closing of the valve will prohibit further volume of liquid to enter the system, as the outlet will be closed.

With regard to claim 4, the reference does not teach the exit valve to comprise a panel and a hinge. The applicant has stated on page 4, line 25 that hinges of this type are well known in the art. It would be obvious to one of ordinary skill in the art at the time the invention was made to substitute a hinged valve for the turning valve at the exit port of the chamber as one of ordinary skill in the art would understand from the teachings of Zito that a hinge-type valve assembly may be substituted for the turning valve in order to open and close passages in a flowing battery system. As hinges of this type are well known in the art, one of ordinary skill would understand to employ this type of valve to close the port of the flow channel.

The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zito (US 5,439,757 as applied to claim 1 above, and further in view of Hummel (US 4,722,876.)

The teachings of Zito have been presented. Zito does not teach the liquid to be tap water. Hummel (US 4,722,876) teaches a battery where a liquid such as tap water is introduced through ports in order to act as an electrolyte between the electrodes. The battery may have water added to replenish the supply or it may be used to flush products of corrosion from the chamber (claims and column 12, lines 20-55.) It would be obvious to one of ordinary skill in the art at the time the invention was made to use tap water as the liquid source in the invention of Zito as tap water has been shown in the art to replenish the electrolyte supply or flush products of corrosion from the chamber. One of ordinary skill in the art would recognize that water may be added to the system of Zito in order to replenish the electrolyte or to flush the system. The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zito (US 5,439,757) as applied to claim 1 above, and further in view of Colbeck et al. (US 3,508,971.)

The teachings of Zito have been presented. Zito does not teach the positive electrode to be copper and the negative electrode to be zinc. Copper/zinc batteries are well known in the art. For example, Colbeck teaches a water-activated battery where an electrode assembly is placed into a battery chamber. The negative electrode may be zinc (col. 3, lines 1-15.) The positive electrode may include copper (col. 2, lines 60-75.) A water-based electrolyte is added to and circulated through the battery through ports going into and out of the battery. It would be obvious to one of ordinary skill in the art at the time the invention was made to use a system of multiple chambers with an inlet and outlet for electrolyte as taught by Zito with a copper/zinc electrode system as taught by Colbeck as the battery will allow for the addition of water to the electrode system while producing electrical energy from the battery source. In addition, Zito teaches a battery with a plurality of electrically non-conductive chambers and includes a valve system for adding and circulating fluids. Colbeck teaches a similar system without the means for refreshing the liquid. In Colbeck water is just added by submerging the battery in water and emptied by dumping the water from the battery. It would be obvious to use the system of Zito to add water to the copper/zinc electrode assembly taught by Colbeck.

#### ***Examiner Correspondence***

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193. Any inquiry concerning this communication or earlier communications from the examiner should be directed

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to Mark Ruthkosky whose telephone number is 703-305-0587. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:00.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 703-308-2383.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Mark Ruthkosky

Patent Examiner

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*Mark Ruthkosky*  
6/30/03